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The Retiring Mr Green

In Search of an 18th-Century Cartographer

by G. R. CRONE

To scientists and technicians, as distinct from 'ingenious gentlemen', 18th-century England gave but little recognition. Perhaps the man identified by Mr Crone, Librarian of the Royal Geographical Society, might have lived less disreputably in an age when such work was better rewarded

THIS quest began in the course of bibliographical research into 18th-century collections of travels. One of the most considerable of these, the *New General Collection of Voyages and Travels*, was published in the years 1745-7 by Thomas Astley, a prominent London publisher. As it bears no editor's name, it is generally referred to as *Astley's Voyages*. Since the work is composed upon a distinctive plan and represents at the very least much industry, it seemed to me unjust to leave the credit to Astley without further enquiry. Reference books showed that the editorial labour was credited to one John Green, but without affording a clue to his identity. In fact, the references made him a somewhat mysterious figure. "Of its anonymous author Mr John Green I can give no account", confesses one writer, and another refers to the "retiring Mr Green". The former thought, on the similarity of name, that he might be the Rev. John Green, "who kept a School in Soho" and was the brother of Charles Green the astronomer on Cook's first voyage—a very bad shot, as it turned out.

However, one small clue emerged, namely, that this John Green was the compiler of a small work, published in 1736, entitled *A Journey from Aleppo to Damascus*. Here again a certain degree of anonymity was preserved, as the dedication is merely signed with the initials J. G. Internal evidence left little doubt that the editor of the *Voyages* and of the *Journey* was one and the same person.

These resemblances are apparent both in the text and in the maps. In both cases, the editor treats his texts rather high-handedly, claiming to have "strip'd them of all the Superfluities with which they are accompanied in the Original". But the map evidence is more telling. On those accompanying both works, for example, the compiler states: "A line drawn under the name of a place denotes the Latitude being observed, and two lines both the Latitude and Longitude."

This practice is significant in relation to the

state of cartography at that time. New methods of determining positions by latitude and longitude with greater accuracy were being perfected, and the first effect of this was to raise considerable doubts as to the positions of innumerable places, which through centuries of copying, confusion and misunderstanding were cluttering up contemporary maps. John Green, it is clear, had given thought to this problem, and had perceived the need for building up his maps on a basis of accurately determined positions, as far as they were available. Such evidence of his critical capacity added to his stature, and to the interest of his shadowy personality.

Some search among contemporary works of travel added further evidence of his abilities and industry. In 1738 there appeared in London the first part of a two-volume translation from the French of Father du Halde's *Description of the Empire of China and Chinese Tartary*, a valuable account based on the reports of the Jesuit missionaries who were engaged on the great survey of China. Again, the translator preserves his anonymity, but a study of the introductory matter and the maps reveals his identity with the editor of the *New General Collection*, and therefore with John Green. This translation was well received. It was, for example, very favourably reviewed by the great Dr Johnson in the *Gentleman's Magazine*, but without reference to the translator by name.

In the introduction, Green discussed the plight into which map-making had fallen in his day for reasons briefly indicated above, and speaks of "the little Esteem, or rather great Contempt, that Maps are in here". He shows himself closely acquainted with the advances made by the French reformers of cartography, and puts forward a well-informed and perspicacious system for transliterating Chinese names into English.

In following up his remarks on the state of cartography, I came upon a little book entitled *The Construction of Maps and Globes*,

London, 1717, containing an appendix on "some necessary Cautions, Helps and Directions for future Map-makers, Geographers and Travellers". This also is anonymous, but attributed by the British Museum catalogue to one Mead. On reading this, I concluded that the book was well known to Green, and that in fact he had, in the *New General Collection*, carried out Mead's unfulfilled intention of editing a collective edition of voyages and travels.

At this point, bearing in view Green's interest in cartography, it appeared reasonable to identify him with the only John Green who is known as a practising cartographer in the 18th century—an identification which to my knowledge had not previously been made. This man was the author of a pamphlet, *Remarks in support of the New Chart of North and South America, in six sheets*, published by the well-known cartographer Thomas Jeffreys in 1753, and of a similar (anonymous) work, *Explanation for the New Map of Nova Scotia and Cape Britain, 1755*. The two charts which these pamphlets accompanied revealed many of his ideas in practice.

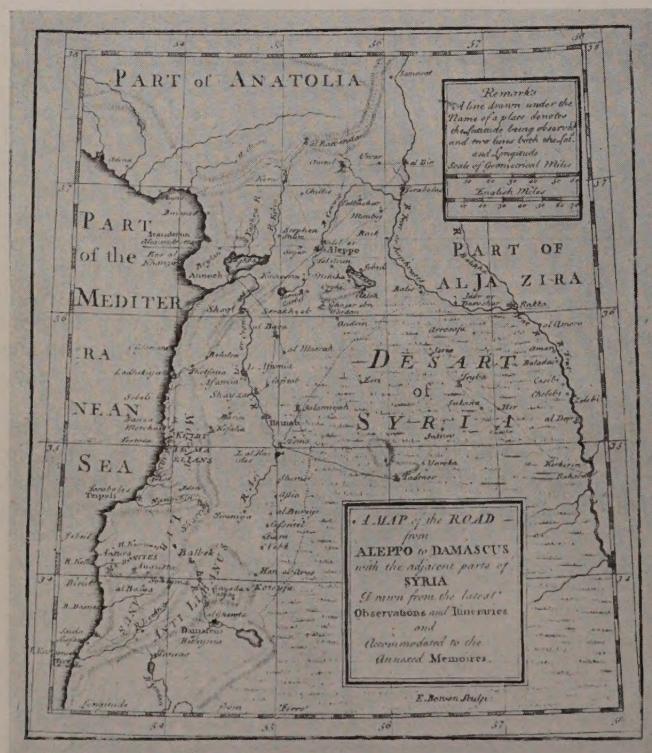
The research outlined above gives evidence of an active career extending from 1736 to 1755, during which a considerable, but hitherto

to unappreciated, contribution was made to general geography and cartography. We may picture Green as a typical industrious 18th-century writer, a rank or two above a mere publisher's hack, of a retiring disposition, but, as his comments show, intensely patriotic and Protestant, and somewhat irascible. Industrious he certainly was. The four quarto volumes of the *New General Collection* run to some 2800 pages, which he compiled with the help of one assistant only.

But the problem remained: why this general anonymity, and the lack of any recognition in his lifetime? Were all these attributions correct, or had I erected a fictitious dummy?

The answer to these questions was not long in coming, and was pretty decisive. On the publication of my conclusions, I was informed by Dr W. W. Ristow, of the Division of Maps, Library of Congress, that the Ayer collection of the Newberry Library, Chicago, contained a letter by Thomas Jeffreys, giving a short sketch of Green's career. Mrs Ruth Lapham Butler immediately provided me with a copy and permission to quote from it. The letter, dated January 17, 1767, is addressed to the Earl of Morton, then President of the Royal Society. It reveals that Green's true name was Bradock Mead, that he was an Irishman, thought to have been educated at Trinity College, Dublin, and that his brother, Thomas, was one time Lord Mayor of that city. It goes on to assign to Mead all the work attributed to Green above, except the small volume of 1736. In revealing that his real name was Mead, it points also to his having been the author of the work on maps and globes, and not merely a careful reader of it.

But the letter also explains the air of mystery that surrounded him and the reasons



By courtesy of the Royal Geographical Society

The "Remarks" on this map, by "John Green", 1739, explain his characteristic method of indicating by one line under a place-name that its latitude only had been "observed" (Aleppo) and by two that latitude and longitude were known (Alexandretta)



By courtesy of the Royal Geographical Society

Part of "A new Map of Nova Scotia and Cape Britain" by "John Green", published by T. Jeffreys in 1755, the year the French inhabitants were expelled from Nova Scotia though Cape Breton Island was still held by France. Topical and accurate, it was based on information supplied from French sources

for his reticence. Mead, it appears, was "concerned with some more in running away with an Heiress", for which crime one of his accomplices had been hanged. This led me to a pamphlet in the British Museum with the intriguing title *The whole case and proceedings in relation to Bridget Reading, an heiress. Containing an account of Kimberley's being sent to Ireland to bring over the said Bridget Reading, and of her pretended marriage with Bradock Mead*, London, 1730. The story this pamphlet unfolds has a distinctly 18th-century flavour. In brief, the man Kimberley had been sent to Dublin in 1728 to bring over Bridget Reading, then twelve years of age and heiress to property in London. Kimberley however abducted her, and she was forced to go through a form of marriage with Bradock Mead before a "pretended clergyman". The party then proceeded to London, where Mead had the effrontery to lay claim to her property. He met with no success; he was castigated severely by the Lord Chancellor for his "unjust proceedings", and eventually found himself in prison. He was later released, being

more fortunate than his fellow-conspirator, Kimberley, who, after a conflict over the jurisdiction of the English and Irish courts, was remitted to Dublin, where he was hanged for abduction. The pamphlet presents an unflattering picture of Mead's character; he is said to have contracted at least one other bigamous marriage, and to have "subsisted by gaming, and other indirect ways". He evidently continued in these ways, for Jeffreys asserts that after an intrigue with a married woman, he married her, "& threw himself out of a window 3 story-high in less than 3 months 1757".

There is no need to seek further for an explanation of the air of mystery which surrounded his cartographical and geographical work. Yet Bradock Mead, alias John Green, remains an enigma. A self-willed man of strong passions, unscrupulous and disreputable, he was in his role as geographer industrious and learned, even scholarly, with ideas in several respects well in advance of his time. His career throws an interesting sidelight on literary London and the status of cartographers in the 18th century.

Education in the Northern Sudan

by MICHAEL M. LEGGE

After training as a biologist Mr Legge joined the Sudan Education Department in 1937 as Master of Rural Studies at the Elementary Teachers' Training College. He was thus concerned with much of the reform of the curriculum, and travelled over most of the country on tours of inspection and with parties of students, before he was appointed Assistant Headmaster in a Secondary School

As you pass through any village in the Northern Sudan and wend your way through the narrow streets among the mud-built houses your attention is likely to be attracted by a weird droning noise coming from a particular hut. If you go in you will find it crammed with little boys sitting on the ground around an old man, all of them chanting away and nodding their heads and swinging their bodies in rhythm with the chant. Over and over again a passage from the Koran will be repeated until they have it word perfect, and the old man will have his whip handy for anyone so unfortunate as to be seen not paying proper attention. From time to time they will change to learning their letters by tracing them on the dirty sand on any bit of floor not being sat on at the moment. So it will go on for six hours a day for about six years of a boy's life, or even longer.

Such is the "Khalwa" or Koranic school, indigenous to most of the Arab world and the only type of education to be found in the Sudan when the Anglo-Egyptian Condominium Government was formed just over fifty years ago. Its product is well versed in the Koran (especially those parts used in the

daily prayers) and imbued with religious faith and fatalism suitable for making a farming livelihood in a country prone to the accidents of severe drought, flood and locusts, and sufficient to endure the hardships of the Ramadan fast in one of the harshest climates in the world. Its product can also be said to possess many of the traditional good qualities of the Arab race (such as hospitality) and the beginnings of literacy. But that is about all.

How is it possible to build on such an educational system? It was decided—no doubt rightly—that such a structure could not be built on: the teachers or *fekis* themselves had had no education beyond what they were then teaching and would probably have resented the suggestion that anything more was necessary or even desirable. So Elementary schools on the Egyptian pattern were started with teachers recruited from Egypt, and a Training School for Teachers was established in Omdurman in 1901.

Actually an attempt was made around 1927 (when ideas on "indirect rule" were most fashionable) to build up on the Khalwas by giving the *fekis* a small government subsidy as a stimulus to greater efficiency. From what I have seen of these subsidized Khalwas the plan did not succeed, nor did it please the *fekis*. As one said to me:

"In the old days the local people supported me gener-



Old-style education in the Sudan: a "Khalwa". Verses from the Koran are written on wooden boards and the little boys chant the verses until they learn them by heart. Usually no books or other materials are provided, and they learn their letters by scratching them in the dust

Many nomad tribes roam the Sudan's desert fringes: for their children, such as this Beja boy from the Red Sea hills, education is far from easy

ously because they knew I was dependent on them. But now if I get anything from the government—however little—they say I'm a government servant and their help dries up, so I am worse off than before."

How different is the situation today! In the government system of education alone there are now over 400 Elementary schools, 28 Intermediate and 4 Secondary, educating altogether over 54,000 boys and girls. Schools of similar standards run by Missions and other non-government bodies educate a further 17,000. In addition to the above there are Teachers' Training Schools, Technical Schools, and last, but not least, the Gordon Memorial College and Kitchener School of Medicine now attaining University status as the University College of Khartoum, with faculties in Arts, Science, Medicine, Law, Administration, Veterinary Science and Agriculture.

It is an impressive achievement, yet it is still much below what is needed if the Sudan is to run itself efficiently without outside help, and very much below what the Sudanese want. At a rough estimate there must be nearly half a million boys of school age in the Northern Sudan, of whom only 34,000 or seven per cent get even Elementary schooling. And of these, only four per cent proceed to a Secondary school.

A Sudanese official comments on this: "You call it an impressive achievement but I don't. I was fortunate in getting Secondary education myself; now I have eight children and of course I want them to get no less. But what do I find? Only two of the boys and one of the girls has got into a Secondary school. When I tried to send one boy to school in Atbara he was one of 600 applicants for 100 places. If only the Elementary schools would accept boys younger than seven I would send mine earlier and then mine would get a better chance by repeating in the final year."

His last remark raises a controversial point, so we may take the case of Mustafa Ibrahim,



M. M. Legge

a cultivator living at El Ageiga village close to where the battle of Omdurman was fought.

"I want my son to go to an Elementary school, but the nearest is at Wadi Seidna which is six miles away. He has to walk there and back, starting before sunrise. He could not do that before he is seven years old."

What is the reason for all this enthusiasm for education? Without doubt, as elsewhere, it is largely a financial one. In England, so beset with Savings Banks, National Insurances, Pension Schemes and all the trappings of a Welfare State, we are apt to lose sight of the fact that the natural way to insure against your old age and infirmity is to beget and support large numbers of children when you are young in return for their support when you are old. This is the method adopted in the Sudan, and education is thus looked upon as a potentially profitable investment.

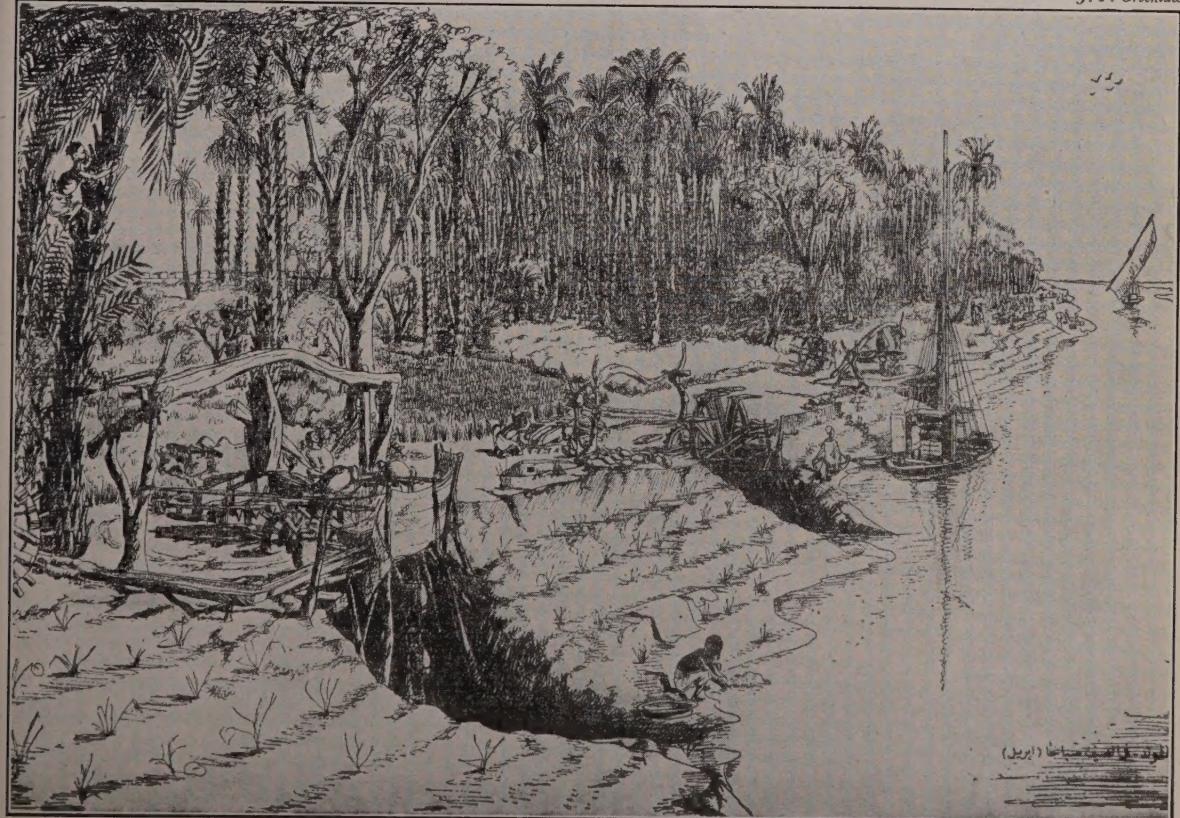


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Education has made rapid strides in recent years in the Sudan, after a long period of slow development. (Above) An Elementary school for sons of tenant farmers on the Gezira cotton belt, south of Khartoum. (Opposite) Two pictures from the book Ways of Living in the Sudan, prepared for third-year Elementary school classes. The book consists of nine stories each describing a visit made to a person living a life typical of some region. Each story is illustrated by two pictures and a map. For classroom use the pictures are reproduced on cards and each pupil is given one to study carefully while the teacher tells the story. Seven types of rural life are described, with that of an engine-driver on the Atbara-Port Sudan line, and only one townsman—an Omdurman merchant. In the upper picture we see him on the foreshore receiving goods from a local sailing boat. The bridge spans the White Nile to Khartoum. On the left timbers are being sawn into the very thick planks from which sailing boats are made. The lower picture shows El Goled in April and illustrates the northern part of the Sudan where cultivation is confined to a narrow strip each side of the Nile and is watered by a sagia which is a machine worked by bulls for raising water in jars on an endless rope. The boy in the top left corner is taking up a male date-flower to fertilize the female flowers on the tree. The wheat is now ripe, but the crops sown on the banks when the river fell are all withered. The boat is a travelling shop that plies from village to village furnishing the needs of those far from markets



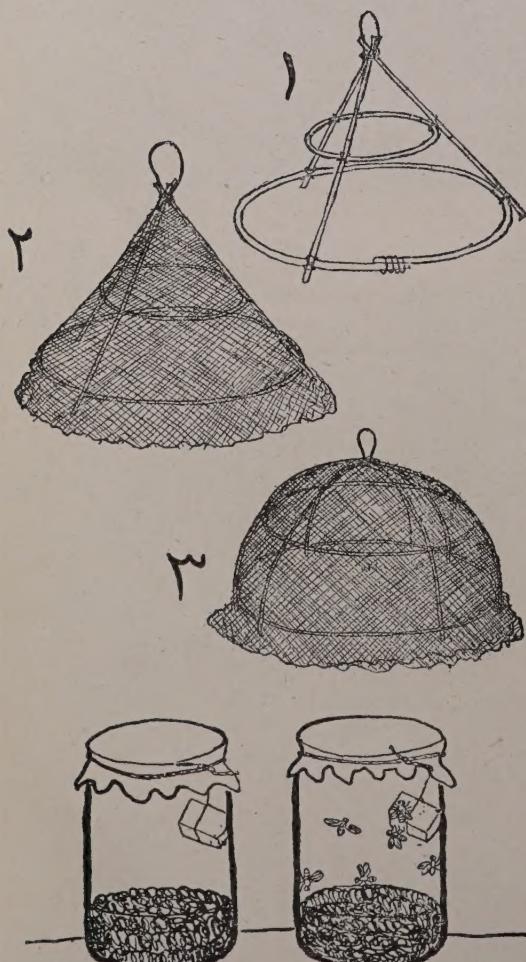
J. P. Greenlaw



J. P. Greenlaw



In the teaching of hygiene in Elementary schools the book How to keep food before eating it combines two different approaches: an emotional one, as in the realistic pictures (left and below) drawn by the talented Sudanese artist Ibrahim Daw el Beit—



١٠. **كيف نحفظ بطاعينا قبل أكله**



—and a more scientific approach shown in the other two pictures, with instructions in making fly-proof food-covers and an experiment to demonstrate how flies can spread donkey's dung from the bottom of a jar onto a lump of sugar, while sugar in a jar near the dung but protected from flies remains clean

As might be expected, any school started which did not lead directly towards or onto the ladder of government service has had little support. For example, schools with an agricultural bias were started in 1916 at Berber and in 1942 at Ed Dueim. The idea behind both was to educate boys who would later return home and help their fathers or become farmers on their own, but neither school survived more than eight years before closing through lack of entries.

As a result of the demand for education spreading faster than can the supply, local people have been encouraged to start schools of their own, managed by local committees and receiving government grants. Unfortunately such local enterprise is confined to the towns, where it is least needed. In this connection it is well to have the views of an Inspector of Agriculture :

"Everyone knows that the future development of the Sudan depends on the development of its agriculture, and therefore it is the country boys—especially those who are going to stay in the country—who need educating, not the sons and daughters of shopkeepers and officials in the towns who are getting education now.

"Take for example the area around Gedaref : it is capable of being developed as the granary of the whole of Sudan (and for export also) but to do this properly we want go-ahead progressive farmers. Yet the few schools in the area are not well attended; the villagers are not interested. They are not prepared to work harder themselves so as to dispense with their children's help and release them to attend school, and unless the school is right on their doorstep there is no chance of the children ever going. They won't support schemes for boarding houses attached to schools."

The solution of this problem is not easy. Apart from the difficulty he mentions—parents needing their children's help—there is

also the fact that many are nomads, moving in small groups with their herds of camels, cattle and goats following the water-supplies and grazing.

Such are a few of the special problems that beset the development of education in the Sudan; but in the task of building up anywhere an educational system starting from scratch the problem of the supply of adequate trained teachers is the most crucial of all. While recruitment from abroad can help in the Secondary and higher stages, the numbers needed for the lower are far too large.

A decision of great importance was made in 1933 when it was decided to move the Teachers' Training School out of Khartoum to a rural site at Bakht er Ruda near Ed Dueim on the White Nile, and add to it a Research Centre for the purpose of revising all the syllabuses in the schools and make them fit better the needs of the country.

This meant—among other things—a rural bias, so a Young Farmers' Club was started in which the future Elementary school teachers eagerly joined. New text-books were produced suited to local conditions and several of



A cover of El Sibyan, a children's newspaper issued by the Publications Bureau at Bakht er Ruda. Appearing monthly it maintains a circulation of well over fifteen thousand copies. The design is by a Sudanese artist



A biology class in a Sudanese Secondary school. Local specimens are studied: camel, Nile perch, pelican and grivet monkey. In the picture skeletons of the two last-named are being compared

the illustrations in this article are reproduced from them. Much emphasis was placed on character training and those activities in and out of school which give special facilities towards it, such as the Topics method of teaching, school societies and journeys made to study the ways of living in particular localities.

As offshoots of Bakht er Ruda Adult Education projects in rural districts and a Publications Bureau were started. One of the first achievements of the latter has been a children's magazine in simple Arabic appearing every month. Sold at the equivalent of five pence per copy it has a circulation around 15,000 to 20,000, so was evidently much needed.

Bakht er Ruda has unfortunately been made to pay the penalty of its own success by having to expand greatly so as to increase the output of teachers. This has destroyed the original rural setting to a remarkable degree. In my time the policy was explained to visitors and new members of the staff as follows: "It is our intention to keep the place one or two steps ahead of a native village, and

avoid developments far beyond what a progressive village community might be able to afford."

Applied in practice, this policy meant that we could not use a cart for the collection of garbage but only a man with a basket and donkey; trees could not be watered by irrigation water (which is not available in most villages) but only by donkeys with water-bags; and so on.

Returning after six years' absence the first thing I noticed was a lofty water-tower, part of a modern installation to supply the needs of what was now a small town! Yet in spite of this "modern convenience" I was relieved to discover that much of the change was only superficial. For, finding my way with difficulty among all the new buildings, I came across some grass huts still used as classrooms, thus ensuring that teachers in training will get used to working under the difficulties likely to be met in schools in remote areas.

More important than the loss of rural setting, however, is the inevitable loss of contact between the senior staff and the pupils. This is of course a world-wide problem, and will

continue to be so until public opinion realizes that if it asks for too rapid *expansion* it will only get *inflation*.

In the Secondary schools about a third of the staff are British, but two have Sudanese headmasters. The subjects Geography, Science, History and Mathematics are all taught in English, and for several years good results have been obtained in the Cambridge School Certificate which pupils take at the end of their fourth year.

All the boys' Secondary schools are purposely sited some distance outside towns, partly to encourage an interest in rural matters but also to reduce the effect of town influence—political and otherwise. Each one has just short of 500 boys.

Entry is by a competitive examination in English, Arabic, Mathematics and Geography. Fees (boarding) are £30 a year, but this is adjusted according to a boy's place in the examination and the parents' ability to pay. There are sometimes a few boys (sons of important Sheikhs, etc., who will inherit positions of much responsibility) for whom the Central Government demands places in the schools. If these do not get in on their own merits they are taken on as extras and thus do not occupy the place of a cleverer boy.

These schools are outwardly similar to an English Public School, being subdivided into Houses, with a mosque instead of a chapel, and plenty of football, swimming and athletics. The atmosphere, too, is somewhat the same, but the resemblance is occasionally rudely shattered by outbursts of political feeling. On such an occasion let us look in at the Teachers' Common Room and hear a British and a Sudanese master discussing it :

British: "What is it about this time?"

Sudanese: "Food—so they say."

British: "What is it about really?"

Sudanese: "The same as usual—they want to run things in this country. But the leading boys said it was about food so that all of them would join in."

British: "But they haven't all joined in—there are quite a number not taking part. I must say I admire their independence."

Sudanese: "That is true—they are more independent than those who shout for independence. And there are many following like sheep because they dare not face the unpopularity. Some from my house wrote me little notes saying they did not agree with the strike."

British: "That is the story they will tell their fathers whether they have taken part or not, and their fathers will believe them. It's a pity

they don't listen to their fathers more."

Sudanese: "You can't expect them to when often they are so much better educated. Do you know it often happens that the only person in the boy's home district who can read his school report is the boy himself."

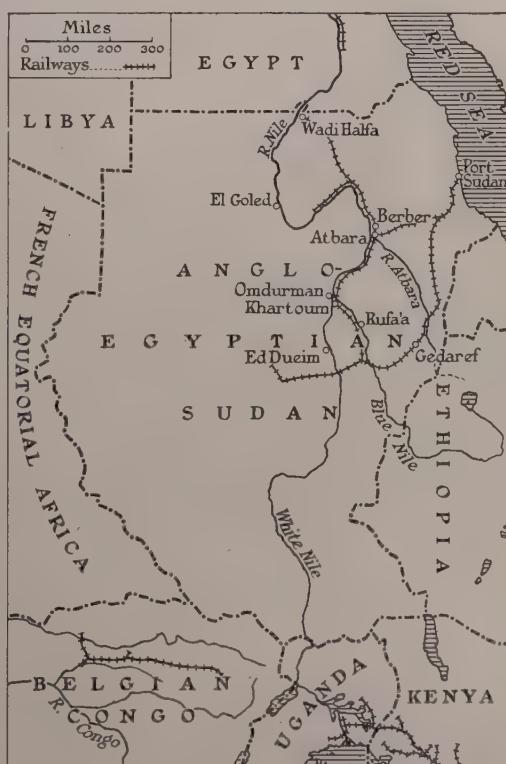
British: "Then they might at least listen to you and me."

Sudanese: "They will listen to you all right when you teach them Maths because they respect your knowledge of it, but not when you talk on any other subject. You may think of yourself merely as a schoolmaster, but just now they think of you as a representative of an Imperial power, and the school as something of yours rather than theirs."

British: "Then it doesn't seem there is much I can do for them except fill them up with Maths."

Sudanese: "Not until they have cooled down anyway. But it is just as difficult for me as I am one thing worse than you—a Quisling in your pay. You have heard them refer to us as Black British, yet I am just as keen as they are for the government to be put completely into Sudanese hands."

British: "Were the schools always like this : and did you yourself behave as these boys are doing now?"



A. J. Thornton



is Ware, from Keystone Press

This Sudanese lad is not just playing trains but is taking a course in railway signalling with model layout, text-book and instructor. The railways of the Sudan are the biggest single employer in the country. The cuts on the boy's face are tribal marks made when he was small—the practice is dying out.



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(Above) A sewing class for girls training to be teachers. Education for girls in the Sudan is now slowly catching up with that of boys. (Below) The sponsoring of journeys to allow students to see different parts of their vast country is part of the Education Department's policy. Boys from a Secondary school History Society examine the Audience Chamber at the 2000-year-old ruins of Old Meroë

E. M. Batchelor



Sudanese: "Certainly not. In my time the discipline was very strict and if we misbehaved the School Sergeant would flog us hard with a wet cat-o'-nine-tails. We accepted this as normal as it was similar to the discipline of our homes. Do you know, although I am over forty my father might still take it into his head to beat me, and would generally be considered to have a right to do so."

"Then in 1936 all that was swept away suddenly and replaced by what you would call liberal ideas from England : discipline based on mutual understanding and trust rather than fear, and all that sort of thing. A lot of faults went quite unpunished and nothing heavier than a cane was ever used."

"Parents did not understand or appreciate the ideas behind the new system, nor do they now, so both parents and school continue to accuse each other of not helping to maintain discipline. I think a lot of our present trouble arises from the sudden extreme change made in 1936—that and the general wave of nationalist feeling all over the Middle East after the war, as soon as the Nazi and Fascist menace was ended."

Lastly we come to what is one of the most vital matters in the Sudan : that of the education of girls. The demand for this was very slow to develop; nobody could see any point in it whatever and among the better-class families it was against all tradition to let the girls ever go out of the house, so strict were the Muslim customs of seclusion of women.

However, the first girls' school was started in 1908 by a great pioneer of Sudan Education, Sheikh Babikr Bedri, in Rufa'a. It consisted of a class of about fifteen of his daughters and nieces. From that small beginning the movement slowly gathered momentum until there are now 137 Elementary Schools, five Intermediate and one Secondary in which girls are taught, and the demand is still unsatisfied. Why should this demand for education have grown quicker than has their emancipation in other directions?

One cause, and still the principal one, is supplied by a play I saw acted in a village as propaganda for a new girls' school. The play had been written and produced by the Elementary School headmaster and acted by his boys.

It began with a declamation by a disgruntled father :

"Was ever anyone so unlucky as me? No son at all, but *five daughters*! What have I done to deserve this? How on earth will I ever get them married?" (and so on for several minutes).

Enter another villager :

"Cheer up—things are not so bad as all that. Why—a girls' school is opening here : send them there and all your troubles will vanish. For they will learn sewing, cooking, hygiene . . ."

The play ended in a triumph for the girls' school, since the father, with his girls all educated, was besieged with a stampede of people seeking them in marriage. The little boys acting the part of desirable husbands were all stuffed out with pillows, so were obviously meant to be rich.

This play also indicates one difficulty the girls' schools have to contend with which boys' schools do not—that is the wastage of teachers through marriage. If an educated girl is more desired in marriage, a teacher, being better educated, is even more so, and as a result the *average* teaching life of any girl is only five years. Since they cannot be expected to postpone marriage, this means that their time for post-elementary schooling and teacher-training has to be cut down to only three years, instead of the six years given to a boy.

The idea that women are worth educating quite apart from their position as wives and mothers is gaining ground only very slowly. At present, apart from school teachers and nurses and two doctors they contribute nothing to public life and there is no class of professional women.

A beginning is now being made, as in 1945 the University College of Khartoum admitted its first woman student. They were very proud of her and were most keen she should stay. As one of the staff remarked light-heartedly : "The pass-mark in the examinations will be her mark. Those who do as well or better will pass, and those who do worse will fail." The number of girl students at the University College of Khartoum has now increased to eleven.

With the whole political future of the Sudan in the melting pot, and the economic future all bound up with the price and yield of cotton, it would be rash indeed to forecast the future for education. It can be said however that there is considerable enthusiasm for it in the country, and there will doubtless be willingness to contribute from public money towards its ever-increasing cost. The structure of all stages of the educational system has been built, and the task ahead is mainly one of expansion, keeping in mind the principal aim of all education, conveniently stated by Saad Zaghloul : "Our need for strong and steady character is greater than our need for knowledge."

In the Brazilian Jungle

by FRANCIS HUXLEY

What kind of a society exists among the Indians of the remote Brazilian jungle, and how does it work? Four months spent with the Urubú tribe showed the author that their life, as will be seen from his present description, though primitive is far from simple and that the anthropologist, to learn the truth about it, must be prepared to shed many 'civilized' prejudices and preconceptions

I ARRIVED in Kuatá village in the hot middle of an afternoon. Every hut was empty, and the only signs of life were the head and haunch of a tapir cooking over a slow and hardly smoking fire; while from a long way away I heard the dim noise of an axe.

I was greeted by two women, who came up one of the paths with large gourds they'd just filled with water from the village stream. We made friends when Chico, my interpreter, decided he was hungry and asked for a bit of tapir. The women hacked off great chunks for us, and offered them with *pimenta* pounded with salt; then they went to make us a *shibé*, a drink of manioc flour steeped in water.

We put up our hammocks in the hut of Arassú, who was the chief's second cousin. He was away with his large family of two wives, four children, one brother and one brother-in-

law, helping his relatives in another village to clear a new village site and a new manioc field, so we had his hut to ourselves. Just before sunset, the other villagers returned: Kuatá, the chief, with an agouti he had just shot; Nusír, back from cutting trees with an axe some Brazilian had given him; and Kosó, the *tusháu* or war-chief, who with his wife had been in the jungle gathering great bundles of leaves to thatch the new feast-house with. After we'd all told each other what we'd been doing in the last few days I was suddenly set upon with questions: what had I brought with me as presents for them? Beads, beads, blue beads; how many blue beads was I going to give? They wanted tobacco, they wanted knives and *machetes*, fishing-hooks, cotton, cloth, needles and thread, mirrors, scissors, trousers and shirts; anticipation filled the air,



like Christmas Eve in a children's nursery.

I was a little dismayed to be at the mercy of such demands, for my store of trade goods wasn't all that large. Belém was a long way off, a week down the river and a couple of days along the coast; I was the least self-sufficient person in the jungle. How could an Indian understand? The next morning, for example, a young man from a neighbouring village came to have a look at me. He'd only just come back from a fortnight's trip to some Brazilian township where he'd got a load of gourds: his own gourd plants had stopped bearing and he wanted gourds, and that's where they were. He now wanted my watch and my trousers and my suitcase. If I wanted them, he argued, I could easily get some more in Belém, where everyone was rich.

The Indians are always moving about. A few of them have got as far as Belém in the north and some have been to Viana or São Bento to the east. They beg clothes and trade goods and return to their own villages usually a little disappointed with their reception. They are losing their self-sufficiency without realizing it; and the jungle, which used to act as a kind of antiseptic against outer civilization, is losing its virtue now that the Indians, whose jungle it is, are daring to move out of it and use it as a road instead of a barrier. In return for their curiosity they receive a craving for tools and ornaments and novelties, they receive influenza and tuberculosis and whooping-cough. Oh, the coughing in the village at night! It was like a relay race: hardly had one cough dropped into silence but it was caught up again, to bound from hut to hut louder than ever. Two Indians died from it while I was there, and fourteen afterwards; and I had nothing in my medicine-chest more effective against it than a gargle.

The jungle used to be like a corked bottle. The Indians couldn't get out, and the Brazilians couldn't get in. The Indians couldn't get out partly because they were bottled in by war amongst themselves: Indian territory is well defined, and trespass is a provocation answered by a raid. The Urubús still go raiding, with or without provocation; they go off to kill Guajajá Indians, and to capture their women and children. These continual raids make many parts of the jungle dangerous for them to go through. Dangerous, but at the same time inviting: no Urubú worthy of his manhood (and accompanied by a large enough number of fellow-Indians) will fail to try and ambush a Guajajá if he sees

signs of one, and this fearful longing being pitched high, there are more signs noticed than is entirely credible: Few Guajajás, in fact, are ever seen, and the sport is getting less popular now that they think *papai-hu* will disapprove: for *papai-hu* is Big Father, the President of the Brazilian Republic, whom they hold in much the same regard as they do their culture-hero, Ma'ir.

Besides enemy Indians, the jungle provides its own obstruction. The only way you can get through it is by walking, unless you live on a river and have canoes. You can see what a remarkable effect canoes have on a society in the history of the Tucanoan Indians. They lived, at one time, in small villages of thirty to forty people, a chief over each village but none over the whole tribe. Thirty years after the canoe had been introduced among them, each village had grown to contain several hundred inhabitants, and a paramount chief had appeared with authority over the entire tribe.

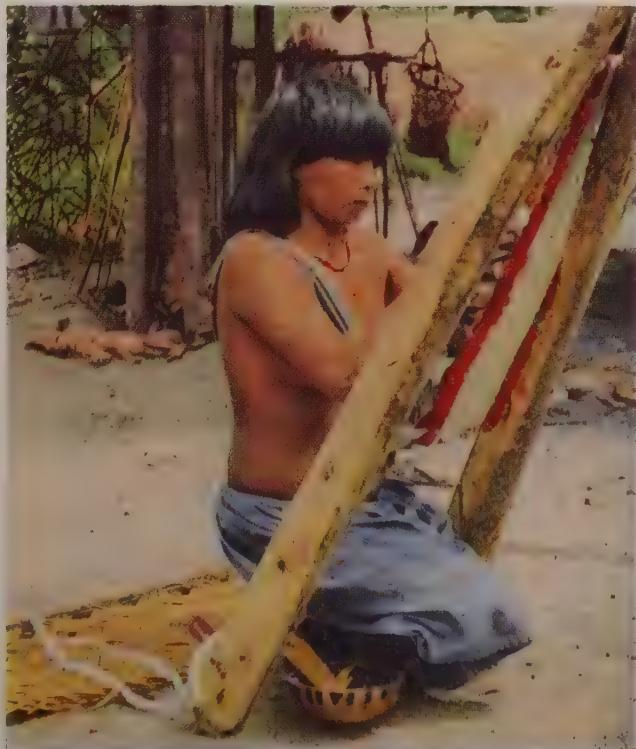
The Urubús have no canoes. Their territory does not reach the banks of either the Gurupí or the Pindaré, the two large rivers to the north and south of them. Instead, it takes in a mass of small streams, many of which dry up completely in the summers. The only way through the jungle is along the obscure paths, tracks sometimes marked only by a cut sapling every ten or fifteen yards. So, though visits between villages are fairly common, co-operation is rare: to Indians, the tribe is a sentiment rather than a piece of politics, and they need no chief of chiefs to concert every Urubú into one purpose.

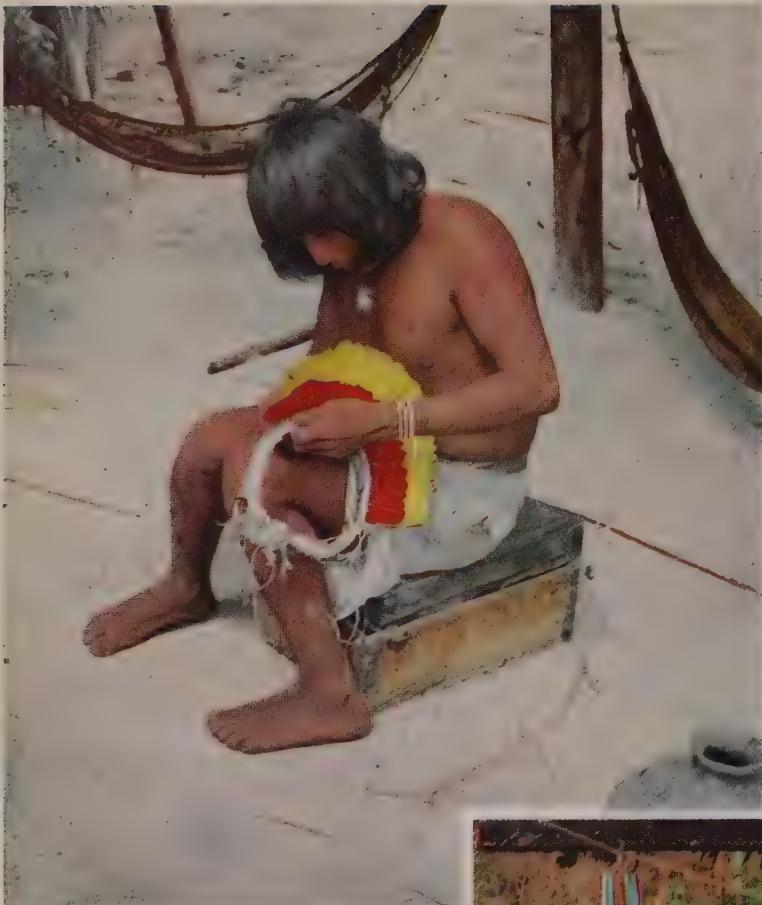
To understand this one must go back to the jungle for a third time. The jungle bottles up the Indians by providing them with their livelihood entire. Not a thing they need but is in the jungle, and is there in such a way that a family could, if it wanted to, provide for itself without outside help. A man can hunt and fish for his own family and, with his wife, grow their own manioc, and they'll not starve, though there will be days when they get hungry. No family, of course, is entirely independent: partly because a family has no definite size or boundary, and you may get in-laws, uncles, aunts, nieces and cousins living not only in the same village but in the same hut. And, of course, every time a man marries outside the family, he creates a whole set of new relatives. The real economic unit is thus neither a single family, nor a single village, but a group of families within a village. Sometimes such a group of families is the village, but more often there are two or



All Ansco color photographs by the author

The child-naming feast of the Urubús was arranged by Kosó, the tusháu, and Kuatá, the chief, for their own children. (Above) They began by building the feast-house. They cleared a space of trees, erected house-posts, gathered leaves and tied them onto rafters which they then hoisted up and lashed to the roof. They and their wives brewed the caouin or manioc beer, and they had to make many of their ceremonial ornaments. (Right) Ashirdá, Kosó's wife, is adorning with fresh feathers the ceremonial baby-sling which she used two years ago at the name-giving of her first child





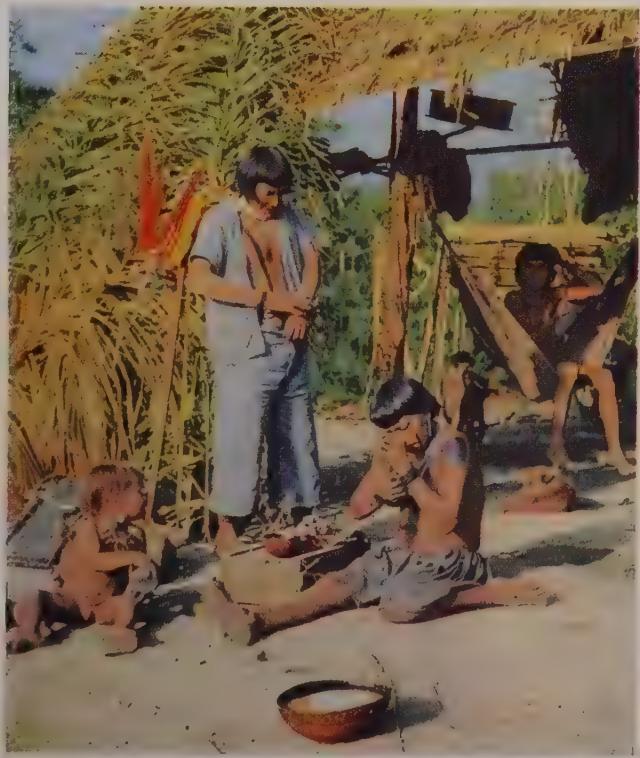
(Left) Kuatá's head-dress took several weeks to make. He had a good stock of black curassow and red macaw breast-feathers, but he had to go and shoot half-a-dozen japú birds for their yellow tail-feathers. The feathers he knotted onto strings, and then sewed the strings onto a cotton band he had woven himself; then he plaited a palm-leaf circlet as a support, and got five long red macaw tail-feathers to stick in at the back

(Right) On the morning of the feast, just before dawn, everyone went down to the stream with all their feather ornaments, their clothes, their hammocks and their bows and arrows, which they washed and carried back to the village to dry in the sun. Kuatá is here seen fingering his head-dress, to the right of which hangs the ceremonial baby-sling; on the other side are his and his wife's ear-pendants, the baby's necklace, his wife's and his own ceremonial collars





Later in the day, the villagers cut their hair, put on their various ornaments and their best clothes; they talk with visitors and wait for night. Then they start to drink, singing the songs of the feast, till two hours before dawn when the village suddenly falls quiet. At sunrise Kosó's wife Ashirá, Kuatá and his wife go round the village with small bowls of caouin asking how drunk everyone got, and telling them the dawn has come. An hour later Ashirá goes round alone, gathering up the hammocks of the heads of families which will be slung inside the feast-house

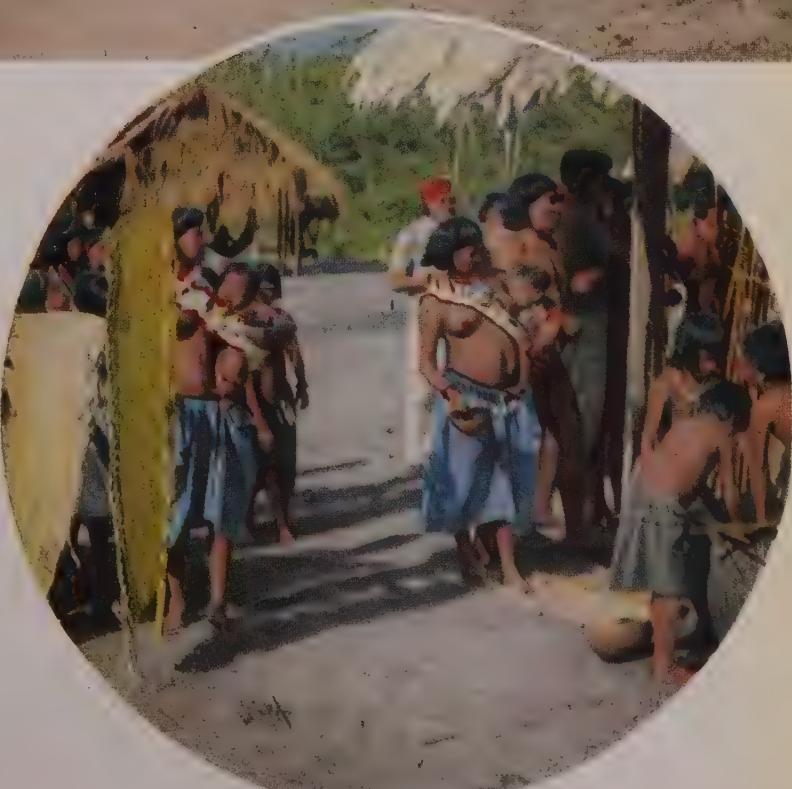




Ashirá tours the village for the third time, offering cao-un and asking everyone to come and see the child being named. As they are invited, the villagers join behind her and the procession goes streaming up towards the feast-house



(Above) Singing a low rumbling song, the procession goes twice around the feast-house, Ashirá at the head, followed by Kuatá and the other men who all have their bows and arrows; then the women, with the children skipping on the outskirts. (Right) The procession ends at the corner of the house where the pots of caouin stand (you can see three children there straining the grey-brown mess through a sieve). The men go inside and sit in their hammocks in a ritual stillness, while the women wait outside



three of them loosely bound together under the person of the chief.

The word "chief" is misleading. Kuatá was the chief of his village, but you would find it hard to distinguish him from his fellow-villagers. True, he had a red cap to denote his position : it dates from the time that chiefs were called by the Portuguese word *capitão*, which the Indians, by a skilful piece of folk-etymology, turned into *akā pitā*, red head. Kuatá wore his red cap proudly : so, however, did Arassú, who was not a real chief at all. For some days I was puzzled why the village seemed to have two chiefs, whose titles appeared to be equally empty. I asked Kuatá, the first week I was in his village, to get a new thatch put on a derelict hut which I wanted to live in; and he agreed readily, but instead of putting his villagers onto the job, he went by himself into the jungle, cut a lot of palm-fronds, carried them back and started to lash them on the rafters. Some of the other Indians came later and helped a little when they felt like it, getting lengths of liana from the jungle for lashings, and giving odd pieces of advice; but they only did so because they hadn't anything else to do, and I was the only person in the village with a decent supply of tobacco.

Kuatá acted out his chiefship as an example, and not as a command. The village lived by custom and not by law, and there were no events which the chief as a chief had to organize. Even the decision to move the village to a new site was one taken by all and not just by him. This happened to Kuatá village two years ago. Kuatá's elder wife had died, and therefore he and his relatives all moved away from the old village lest the ghost of the dead woman return and cause them misfortune. The village had been a biggish one, with some forty inhabitants, but on Kuatá moving away the family of old Tamuī (who had married Kuatá's father's father's brother's daughter) stayed behind. He was sufficiently distantly related for a death in Kuatá's family not to affect him; and then he was over eighty, and as a paterfamilias had nearly the same *cachet* as a chief. The village divided into two, and Kuatá moved a mile or so away and settled there with the families of his two brothers-in-law and his two second cousins.

A village also moves away to a new site when all the virgin jungle close to the village has all been cut and burnt at one time or another to make clearings for manioc. The tubers of manioc are ready for harvest in the second year after planting; when they are

dug up, the stems of the old plant are cut into six-inch lengths and thrust into the ground where they take root and again produce tubers. After the second crop the ground is exhausted, so that a new patch of jungle must be cut, burnt, cleared and planted. When all the jungle within easy walking distance has been thus exhausted—it may take from ten to fifteen years—and when the game is getting scarce close to home, the villagers select a new site where the jungle hasn't been touched, build a new village, clear a new manioc field and finally settle there when the manioc is getting ready for harvest. The old village is burnt to the ground, the clay pots and the enormous clay plates used for roasting manioc are broken and scattered over the ground, and new pots and plates are made for the new village. New groves of cashew trees are planted, new lemon trees, gourd trees, banana palms, pawpaws; while in the old clearings canes are grown, which provide the Indians with shafts for their arrows for several years, until the jungle encroaches and swallows everything up.

In all this work the chief can do no more than lead towards a decision, and everyone then knows what he should do without being told. Much the same kind of authority was doubtless vested in the tusháu or war-chief. He led and engineered attacks, but once the attack had started and the war-party burst out of the jungle into the enemy village, yelling, stamping their feet and loosing great war-arrows with leaf-shaped iron heads six inches long, there was nothing more the tusháu could do. One cannot dictate tactics in a mêlée.

At home, the tusháu had other duties to perform. When boys came to puberty it was he who decided when they should adopt the sign of manhood: in that way they became his warriors. Some Indians say that it was he, too, who used to marry young couples by seating them together in a hammock, their arms around each other's necks, and binding a piece of cloth about their heads. He had other spiritual powers which, now that his office has sadly degenerated, are difficult to define. One sign of them I saw when a tusháu started to sing : an Indian, sitting with me in my hammock, at once struck his head with his hand several times, explaining that he would fall ill if he didn't and probably would die. Such things gave me the idea that the tusháu combined the duties of a shaman or medicine-man with his other ones, but the Indians hotly denied this whenever I suggested it; and as there are no real shamans left in the tribe

The women put down their palm-leaf mats at the corner of the house and sit on them. In front are the wives of Kosó and Kuatá, for whose children the feast is being given; behind are several 'godmothers', and two other women who are taking advantage of the occasion to have their children named





The child is given to its 'godfather' who, blowing a bone pipe, dances with it and then announces its name. The feast ended in the evening when Kosó toured the village, saying: "The sun has set, the caouin is over"

nowadays (they all went up into the sky, I was told, when Ma'ir put fire to the world a long, long time ago) it's difficult to make up one's mind.

This lack of shamans is very interesting. The great shaman centre is in the next-door tribe, the Tembés, and several young Urubús have gone there to stay in the village of old Domingos, the most famous Tembé shaman. There they learn his songs (often without understanding the words, though Tembé and Urubú are both members of the same language family, Tupí) and his techniques; and they go back to their own villages where they do cures in Tembé style, summoning the spirits of the jungle animals into their great two-foot-long cigars, blowing the spiritually charged smoke over their patients' bodies, wherever the hurt is, and then sucking out the pain and sending it, with another fuming mouthful of tobacco smoke, volleying off into the sky. But everyone knows that these men are not *real* shamans; they're *pajé rā*, pretend shamans, and no-one fears them as they did the ancient ones who were grim with power.

There is no law. Or, one should say, no punishment for transgressions. People rarely steal. A sly, foxy, merry chief called Kuashipurú once stole twenty arrows from the tusháu of another village. The tusháu was sad, and his opinion of Kuashipurú went down lower than it had ever done before: but there was no law he could invoke against him although, he confessed to me, he would try and steal some arrows back one day if he got the chance.

No-one I knew could remember a murder. There was a homicide about fifteen years ago: a man got drunk at a feast and sliced a man with a machete when he thought he was just slicing a house-post. He was *ñarō*, I was told, he was in a rage, and it was the rage which killed the man. Everyone was sorry, and no-one did anything. (If a white man kills an Indian, say by giving penicillin to a sick man who dies an hour later, that's different: the Indians extort all his possessions from him by threats of death.) Even adultery, the favourite Indian failing, goes unpunished: the cuckolded husband goes off into a small rage, he hits things and sends arrows into pots and trees, but he calms down and accepts the situation.

It seems odd to a stranger how society like this manages to work at all. It works, one can say, as a family works, by constraint of conscience and affection, aided by super-

natural sanctions. For instance, a hunter who comes back with game, after he has cleaned it and cut it up, divides it out among his relations, principally his brothers-in-law and first cousins, and also, if anything is left, to his more distant relatives; he himself can only keep the head and spine, or he'll fall supernaturally ill and die. So every Indian family helps to feed its neighbours, and even I received my portion whenever a kill had been made. This kind of feeling, of habit backed by supernatural sanctions, impels the Indian to follow such customs as mourning and the couvade, less because the compulsion is sinister, than because it is familiar.

The couvade is an especially interesting set of customs. Some months after a child has been conceived, both father and mother must stop having sexual intercourse, no matter with whom. When the child is born, the parents are confined to their hammocks, where they lie with their hands behind their heads and their legs crossed, eating only tortoise flesh and a mash made from manioc flour. After the child's navel cord has fallen off, they can get up, but are not allowed to go into the jungle for several weeks. A variety of other prohibitions are imposed, many to do with food; in addition, till the day of the feast when the child is named, the parents cannot cut their hair, or paint themselves, or put on their feather ornaments; the penalties for not observing these rules fall, with unhappy and sometimes fatal effects, either onto the parents or onto the child itself.

The name-giving feast which I saw was prepared and performed with a certain loving and careful awe. Five or six days before it was due to start Kuatá and his wife became silent and bleak: they spent most of their time stitching or sticking feathers together to make ceremonial ornaments, and fussing with Kosó over the great pots of manioc beer which were seething horribly with their own fermentation. From having been a good friend of theirs, I became an intrusion: the Indians rarely came to my hut or even smiled at me in passing, being absorbed in the wholly serious desire that nothing should spoil the swing of the feast once it had started. When it was all over and they had celebrated themselves out of their anxiety, they came to beg a cigarette off me, they sat down exhausted in my hut and gave me a tired and friendly smile. They hadn't so much feared the feast would be a failure, as wished it to be a success.

Royal Tombs at Mycenae

by FREYA STARK



& N. Tombazi, by courtesy of the Greek Information Office

The citadel of Mycenae: a darker mound “against heaps of mountain bleached like bones”

Only within the last three generations has archaeology verified the dwelling-places of the Bronze Age heroes described in the Homeric poems and, later, in the Greek tragedies. Behind the Mycenaean world of 1400–1150 B.C. lay the island civilization of Crete and, on the mainland—what? The tombs now disinterred, dating from the 16th–17th century B.C., may reveal part of the answer

THE traveller from Corinth southward, when he dips over a low pass and leaves on his right hand the road into Arcadia—or he who comes north from Argos—or the islander landing at Nauplia and crossing lowlands grown out of the sea: all these, if they turn their eyes to the north-east, may distinguish against heaps of mountain bleached like bones the darker mound of Mycenae. It looks low as you approach it, though firmly wedged on a saddle of the limestone between abrupt ravines; but as the road rises the Argolid

plain stretches away and ranges behind ranges appear like petals of roses, delicate pencilled outlines of farther hills; until, below the Lion Gate of the Atridae, by the Perseia fountain house whose stones Professor Wace has this year uncovered (its waters—long deviated—now nourish the later Mycenaean village below), one may look from end to end over the outstretched lands of Argos and see their dangerous loveliness richer than the eyes of Helen and saturated too with murder.

A climate of doom clings to the citadel and

its fragments of polygonal walls and empty beehive tombs; there is nothing here of the tranquillity of Olympia or health of Epidaurus; the night comes down with a stillness louder than noise, a silence of things that have happened and exhausted themselves long ago. And now, out of the past of this Past, legends four centuries older than the Trojan War and the fates of Agamemnon, new forms emerge—an earlier dynasty of kings and queens, nameless but substantial in their bones.

Dr I. Papademetriou for the Greek Archaeological Society has uncovered the most dramatic find here since the days of Schliemann. A cemetery, a stone's throw west of the Perseia fountain, has already yielded six un rifled graves, and promises more from excavations continued across and below the roadway where tourists to the Lion Gateway have been treading without knowing it the earth that shrouds the oldest northern settlers yet discovered in Mycenae. They lie as they died, stiffened as death found them, in whatever attitude of anguish or repose; some on their right side, in a quietness of sleep, with knees gathered and the cheek pillowed on the hands; two, in the largest tomb, lie stretched at length, and between them, with strong knees firmly separated, a chief seated, taken perhaps from his throne. His height is near six feet (they are all huge for this Mediterranean world); his teeth are intact, even and bright; a fierce, and almost gay vitality seems to inhabit those bones so resolutely laid. Round the heads of these three, fifteen bronze swords and knives lie scattered, with loosened hafts of alabaster and ivory that remain; the wood has perished. There was a wooden casket, also perished; a mask of gold, two golden cups and a most delicate cup of fragile earth with a laurel branch in relief sculptured on the handle. At the men's feet, belonging to the same tall northern race, a woman lies with clasped hands, her lost and ageless pain still locked in her closed fingers. It is moving to look down on the various postures, momentary gestures whose duration was to be nothing, which the rigour of death has captured for three thousand and five hundred years. A cauldron and large

vat of bronze lie in a neighbouring tomb, with pottery—brown or cream in opaque patterns, or glazed orange or cream, fashions of the Cyclades and Melos copied by Helladic craftsmen. The dating of these discoveries is pushing the whole of Mycenae backward into time, and the inhabitants of the burial ground, still held in the wall that was originally built to enclose them, are to be placed before the Atridae, perhaps among the first comers and descendants of Perseus, somewhere about the 17th century B.C.

They were buried in shaft graves (although as I write a chamber tomb has been also discovered). The largest grave was lined with unbaked tiles, and covered with wooden planks and then with rushes; and over these a layer of waterproof clay which has kept the print of the more perishable things below. Above them two stone stelae have been found, carved in relief with bull and lion hunts, and with the fine wave-pattern of the Mediterranean (already familiar to the early stone carvers of Malta). Over the smaller tombs, a covering of stone slabs suggests, by their number, that they may have been shaped into a gable-roof, like a house. The funeral feast was held by the open grave, and earth shovelled later; and the tombs were reopened and bodies pushed to the edges to make room for new inmates as they came. These things the archaeologists infer from animal bones found in the graves, and from the skeletons disarranged after their death: but of what



A. J. Thornton



V. & N. Tombazi

Archaeologists have recently revealed graves of early settlers of Mycenae. Belonging to the Bronze Age, these royal tombs of a nameless dynasty antedate by four centuries the Trojan Wars. (Above) A skeleton in one of the graves, which are near the Lion Gate, being carefully uncovered. (Opposite page) The largest of the graves in this group contained five skeletons, three of which are seen in the photograph. One, a chief or king seated perhaps on a throne, was of great stature (nearly six feet in height), and all were tall for these parts—evidence perhaps of their northern origin. Around them were many beautiful vases, bronze weapons and other funerary gifts.

(Below) Above the grave on the opposite page was found this stele, depicting a lion-hunting scene of 1600 B.C., which was later defaced by the rectangle cut in the centre



V. & N. Tombazi



V. & N. Tombazi



(Right) A clay tablet found in an oil-merchant's house in Mycenae. Probably an account list of some sort, it is in an early form of Greek in Minoan-Mycenaean script, not yet completely deciphered. (Opposite) The Lion Gate at Mycenae, through which Agamemnon may have ridden to the Siege of Troy. The heraldic lions over the lintel are perhaps the oldest sculpture in Greece

went before, of their names and their story, no history is apparent, except what is written in the tall northern structure of the bones and skulls, for anthropologists to measure later on.

The more articulate discoveries have been made in a private house of the 13th century B.C. excavated for the British School of Archaeology in Athens by Professor Alan Wace. Here a number of inscribed clay tablets, burnt (and probably preserved) by the burning of the house, have an importance whose full value can only be realized when the key to the language is found. The unlocking is very near: the numerals are known already, and it is almost certain that the language will prove to be an early form of Greek; for the Minoan-Mycenaean syllabic script, examples of which dating to about 1400 B.C. were first discovered in quantity by Sir Arthur Evans at Cnossos in Crete over fifty years ago, is on the point of being effectively deciphered.

These tablets are the first ever to be found in a private house; they are accounts, columns of words followed by figures, and show that three thousand years ago, among the Greeks of the Late Bronze Age, the art of writing was not confined to palace scribes and was, indeed, much more widely diffused than we have been disposed to think. On the back of one of these tablets, as it might be on a blotting pad in a modern committee room, some Mycenaean scratched a dancing figure with slanting eyes, a careless trifle full of grace—probably the first doodle in history?

Perhaps one of the chief interests of archaeology to us, the unscientific lookers-on, is the salad which it makes of ancient and modern. Among his finds Professor Wace has a little dump of tools, chisels, a double axe, a hammer, beaten in bronze but ready for use by any workman today; the perfect, simple shapes have not changed. But an ivory only



Elizabeth Wace

two centuries older belongs unmistakably to its own art and day: it is the curved section of a tusk, 20 inches in length, with a griffin and the feet of an opposing griffin broken off against it; in its small compass the whole speed and vigour of that Mediterranean world are gathered; the sure and delicate lines have a long tradition, foreign to us, behind them; and the tusk—Professor Wace told me—was taken from the elephants of Syria, long since extinct.

It is to be hoped that, even in our straitened world, some funds may be found to enable these discoveries to continue.

An Austrian Spring Festival

Photographs and text by GERTI DEUTSCH

A HOLLOW sound reverberates through the air. Its harsh abrupt rhythm is persistent. As the volume of tone grows while approaching, something in you has been prepared to meet the improbable. From somewhere deep under the ground it comes straight to the very centre of your nerves; you have been 'earthed'. Now the sound has reached the surface of the snow-covered soil and manifested itself. It is a figure moving with jerky steps, swinging the hips backwards as it walks and each step shaking a ring of heavy cowbells attached to its waist. This figure wears a mask with a large curly moustache surmounted by an elaborate head-dress made of innumerable brightly coloured flowers interspersed with little mirrors. It is Sire Winter and as he rings the bells he is called "*Scheller*" (bellringer). Only now you hear a sweet tinkle of tiny bells —like the ones on sledges—that playfully surround the unyielding tone of the big bells. In the same way does the graceful dance of Dame Spring (or "*Roller*")—for it is she—mellow the grim advance of his angular strides. This couple is followed by another twelve or so, all dressed alike but for the finest variations of their masks and colour-schemes. They form the nucleus of the *Schemenlauf* (literally "*Spectre-racing*") and they symbolize the timeless duality in man or the world or life or the universe: Winter, death, evil, the aggressive side of the male, is ringing his own death-knell and banning destructive forces back into Mother Earth, while Spring —youth, life, caressing love, the feminine side—takes over and awakens joy once more in the human heart. But as the world is round there are no clear frontiers in anything; Winter goes on right to the end of this day's enjoyment and even out of his doomed form grow the flowers of Spring.

The conception of duality can make a somersault and show that there is another side of quite a different order: the comic. And so the Scheller and Roller are at once followed by the *Loggescheller* and *Loggeroller* who dress up in the gayest fashions, wear dumb-sounding wooden bells round their waists and caricature to the smallest detail the dance of Winter and Spring, making it ridiculous. Now that their imagination is touched off it can pour out all the suppressed joys and fears, all the images of bliss and

horror that have been produced in the most varied disguises since man existed and which the people of Imst are lucky enough to let loose every four years or so. Their variations on the theme of ugliness and repulsiveness are infinite and could shame a Hieronymus Bosch. There are the traditional groups of a kind of police force, whose responsibility it is to keep the public in order. They move along with a continuous tripping, rather graceful, step. The witches, who have left their carriage and started off with a wild dance around it, proceed sweeping nosy onlookers away with their brooms. There are the *Sacknerinnen*, the most hideous giant females who hit onlookers with a ball of cloth that looks softer than it feels. And then there are angels and Moors, who with a permanently innocent smile squirt syringes filled with icy water at them.

The other maskers may not reappear every year; they may have been born on the spur of a moment's exhilaration and vanish, or some quaint figure like that of the *Vogelhändler* may re-emerge from the past history of Imst and stay for good. Birdcatching used to be one of its main trades. The birdcatchers enjoyed a position very near to the heart of the community. Their travels used to take them as far as Russia and Scandinavia northwards, to Greece and Turkey in the south. They all started off at the same time and often stayed away for a year or more. When the first of them returned a candle was lit in the inn at the very top end of the village and this candle had to go on burning until the last one had come home. When they returned with their delicate freight they brought back tales that the villagers surrounded with mystery and romance during long winter months in which they had been completely cut off from the rest of the world. The birds too were received right inside their lives. A room would be converted into a miniature wood. There they made their nests until the time for a new trading expedition had come. In the festival-procession the *Vogelhändler* appears with his children, the boy a miniature edition of his father, in 16th-century costume. But for a long coat and a flat-brimmed semi top-hat it hardly differs from the present-day Tyrolean outfit. Each of them carries on his back a trestle with cages full of stuffed birds neatly



Up the hill from the lower to the upper town of Imst there winds a strange procession headed by a dozen couples representing Sire Winter and Dame Spring; they move in a continuous dance, Spring with graceful steps occasionally interrupted by a succession of jumps and Winter rhythmically jerking cumbersome bells at his waist



*When they reach the last inn at the top of the town the hot
dancers take off their masks and go inside for a drink. The
delicate Springs are suddenly transformed into red-faced peas-
ants, strangely adorned with veils of lace; their discarded
beauty mingling with grotesque masks of horror on the tables*

By noon all maskers and carriages are assembled and the real Schemenlaufen can begin. It will go on until six o'clock almost without pause, past onlookers who have come from far and near. Occasionally you are "introduced", an honour which merely allows you to make a donation in return for a badge





For weeks before the Schemenlauf begins tremendous secrecy pervades the town of Imst; there are locked barns, tarpaulins cover courtyards and figures whisper passwords: the carriages are being created. That of the Witches is drawn by oxen, driven by little boys dressed as dwarfs. On top of a giant toadstool towers the Hexenmutter who is in control



The Witches are the most brilliantly coloured of the maskers. They wear bright red skirts and platinum-blond pigtails. Their sinister masks, which only partly cover their faces, 'bristle' with symbols that seem to derive from the cat and they use their brooms lavishly to sweep onlookers who are becoming too inquisitive out of the way



A certain number of maskers, detailed to keep the onlookers in order, use their privileges to the full. An angel or a Moor will suddenly squirt a syringeful of icy water at you, or some vast creature will hit you on the spine with a ball of cloth

The village fountain becomes an island of comparative peace. Here Moors and angels come to refill their syringes; women chat with masked husbands or friends. The pace of the excitement slows; you are suddenly aware of the beauty of the little town





A very odd group of amiable 'barmies' are the Loggescheller and Loggeroller who caricature the central figures of Winter and Spring, their dances a grotesque imitation in every detail of the one that welcomes the new season. They wear skirts of sheaths of corn-on-the-cob, large wooden bells around their waists and fantastic cone-shaped hats

A special paper is printed to be sold on the day of the festival. It is filled with biting and witty gossip written by the villagers against each other, but is all taken in good part

heaped on top of one another. And like all the others they too wear masks; theirs have been inspired by some old, long-beaked bird.

This homely trio floats along on a whirling stream that increases in noise and turbulence as the day draws to its climax. Moving on, no longer by your own volition, you will be swept past a small congregation in deep mourning singing a brilliantly witty parody of a dirge, be attacked by three enormous bears, or find a monkey making signs at you from the top of a tree which is pulled along on a cart. Your ears will be shattered by a sudden burst of trumpets completely out of tune to tease the local band they caricature; two chimney-sweeps go on climbing up their ladders into every window they can reach. Amid loud guffaws an enormous carriage will pull up. Built on it in paper and cardboard is a prison filled with girls that have gone astray (like all the other participants they too are men) and one after another they will be hanged on the gallows, every possible insult being screamed at them by the onlookers. With ears ringing, knees beginning to give way, you stagger to an inn and if you wait patiently sandwiched between people who feel exactly like yourself there will be some food coming along which is good and hot.

The Church has done her best in trying to quench these outbursts of elemental forces in human beings, which go back very early into heathen times. She almost succeeded except for three places in the Tyrol: Imst, Telfs and Nassereith, which were the only ones to survive her fierce onslaught in the Middle Ages. Stubbornness and genuine enthusiasm for a heritage that went back for generations were cleverly balanced with an astute sense of business. Their takings, which are quite considerable—in 1949 they made as much as 18,000 Austrian shillings—are divided up between the participants, but a handsome portion is handed over to the Pestkapelle, a



little chapel commemorating the plague. In Imst, which besides its agriculture is now a prosperous little industrial centre for weaving and printing of material, a committee is responsible for the organization of the Schemenlaufen. Only men with a good record are allowed to take part and it is considered an honour to be a Scheller or a Roller, which usually goes from father to son. All participants have to pay five Austrian shillings a head for their day's expenses, but they get fifty shillings to defray the cost of keeping their masks and costumes in order. Most of the masks, some of which are masterpieces, are old. But there are new ones made by one of the few surviving exponents of this art, a Herr Zangerle of Imst. Without making a design or drawing on the square piece of wood he carves straight from a memory that carries visions of beauty and nightmare from one generation to another. And to ensure the continuity of this tradition the children of Imst are already being coached in the dances and will have their own Schemenlaufen in the following year.

Mutton bird and Tuatara

by L. HARRISON MATTHEWS,

based mainly on material and photographs supplied by

R. V. FRANCIS-SMITH

The following account of two strange creatures that often live together combines, in a fortunate manner, the wide experience of Antipodean bird-life possessed by Dr Harrison Matthews, who is Director of the London Zoo, and the local knowledge of Mr Francis-Smith, who lives in New Zealand

Two years ago this autumn my brother's yacht had taken us over to the south-west of Ireland. We had been in to Baltimore, and after exploring the islands we were on our way down Roaring-water Bay past Cape Clear Island towards the Fastnet; it was a bright sparkling day with a stiff westerly breeze that knocked up plenty of jobble as we reached towards the open sea under full sail, the ship going like a train. The gannets were diving on the mackerel shoals all round us, and large flocks of petrels skimmed low over the waves, wheeling high over the crests and passing out of sight again as they dropped into the troughs—they seemed to be enjoying the breeze as much as we did. Most of them were the common Manx Shearwater, but small bunches of petrels of another species were scattered among them; they were darker and greyer than the Manx Shearwater, underneath as well as above, and were a size larger.

It was strange to think that these birds, smaller than most seagulls, gliding so lightly over the swell, had perhaps been hatched in the gloom of deep burrows in the ground on remote islands off the coast of New Zealand, more than 10,000 miles away; and stranger still that within a year many of them would probably have returned to their ancient homes to lay their eggs. The European bird-books call these travellers the Sooty Shearwater, but at home they are the famous Mutton bird of the Antipodes—the *titi* of the Maoris.

Several species of shearwaters are known as Mutton birds, but the most important are the Short-tailed Shearwater of Tasmania and the Furneaux islands in Bass Strait, and the Sooty Shearwater of New Zealand; the first breeds nowhere else, but the second is also a common breeding bird of the Magellan region of South America and the islands of Cape Horn. It is, however, only in its New Zealand haunts that it is known as the Mutton bird. During the southern winter it migrates into the Northern Hemisphere, and is a common bird in the north Pacific and Atlantic oceans.

As the breeding season approaches the Mutton birds assemble in vast numbers at their nesting places; they are so numerous that a person standing on any of the headlands of the south-east coast of the South Island of New Zealand during late September, October, or early November can see the birds flying south in an endless stream towards Stewart Island and the nearby Titi islands.

The Mutton bird islands are precipitous, and covered with *teteaweka* and *tupare* trees beneath which the ground is riddled with holes like a rabbit-warren, for the Mutton birds, like most petrels, make their rough nests in underground burrows. The soft peaty ground makes digging easy for the birds, which shun the daylight when ashore, each sitting on its single white egg a yard or more from the entrance.

The breeding birds on arriving immediately set about their task of spring-cleaning their burrows for occupation. They spend about a month scratching out the accumulated rubbish with their sharply clawed feet, in relining them with fresh dry material, and in carrying on their noisy courtship. The birds are nocturnal when ashore, and all this domestic work is done at night to the accompaniment of a tremendous uproar; the cries of the birds have been likened to the groaning of a man in great pain or the hideous caterwauling of a cat.

The first birds to arrive each year are the old paired ones, those that arrive later are the younger non-breeders that spend their time in courtship and in playing at nest-building without achieving any family. The old birds that have bred before return not only to their own island but to the very nest-burrow that they inhabited in the previous season. The duty of sitting on the egg is shared equally by the parents; one incubates and fasts while the other roams the ocean and is sometimes absent for as much as two weeks.

When the chick chips its way out of the egg after some eight weeks of incubation it is



For a few weeks each year from April 1 certain rocky islands off the New Zealand coast are the scene of intense activity: the Mutton-birders are at work. In this traditional Maori industry privileged white people also participate. 250,000 Mutton birds, a highly prized delicacy, are caught each year





(Above) On some of the islands the Mutton-birders live during the nine-week season in "villages" of shacks perched on the steep thickly wooded slopes, through which tracks lead to the high ground where the birds breed in countless thousands. From the island-tops the catch is transported to cleaning sheds (left) on overhead wires. The owner of this shed has been Mutton-birding for fifty years



Mutton birds—only in New Zealand is the Sooty Shearwater so called—after spending the southern winter wandering at sea return not only to the same island but to the same nest to lay a single egg. (Above) A parent with its chick. (Below) Mutton bird burrows riddle the peaty soil of the islands



covered with a fairly thick coat of greyish down which clings to the feathers as they sprout underneath it. The parent birds do not return every night—they may be away for as much as ten days—but the chick, like that of all petrels, can fast for many days without harm. It feeds voraciously whenever the parents bring it food, so that by the time it is half grown it is said to be "little more than a ball of fat".

The food of the Mutton bird in New Zealand waters is a small species of fish known locally as the sardine, and in most seasons there is an adequate supply of it for both the parents and the young. But in some seasons it is scarce, and the old birds may travel as much as 600 miles from home in their search for food. In the years when the supply of fish is poor there is a high proportion of weak undernourished birds, called "kihakas" by the Maoris, among the Mutton bird chicks. It is doubtful if any of the kihakas reach their full growth or successfully leave the nesting burrows to reach the sea.

When fish are plentiful large areas of the

sea are blackened by the flocks of feeding Mutton birds that gorge themselves until they are so heavy that they cannot rise and can only flap lazily from the path of an approaching vessel. The Mutton birds sit on the surface and dive for their food, but the White-fronted Terns, that often consort with them when feeding, hover overhead and dive down to the water. The breeding population of Mutton birds is estimated at several millions—250,000 chicks are taken by the "birders" every year—and as each bird is believed to eat its own weight of fish a day, about a pound and three-quarters, the enormous quantity of fish eaten every season can well be imagined. One observer has seen thousands of adult Mutton birds on the shallow water, and on the tidal flats exposed by the ebb near Bluff on the South Island opposite Stewart Island, so heavy with sardines that they were unable to take flight until they had disgorged many fish—one bird got rid of twenty-three fish before it could rise from the beach.

Mutton bird chicks are not only very fat, but their stomachs are filled with a quantity of oil that is secreted by the glands lining it. No-one knows why the oil is produced—but if the birds are disturbed they react by discharging a stream of it at the intruder; oil-squirting is a well-known habit in all the smaller petrels, but the stomach oil probably has some other function besides that of defensive ammunition.

Towards the end of April the parents desert the chicks, whose down is by that time being shed to reveal the feathers that have grown underneath it. The deserted chicks come to the mouths of the burrows at night, especially on dark or misty nights, and shuffle about nearby, flapping their wings without rising from the ground. And then one night they make for the ocean, scrambling over the ground with partly opened wings, half running, half flying, until they tumble over the cliff edge and fall safely onto the sea from which they do not return until they are ready to breed.

Young Mutton birds have been prized as food for generations, probably since the first Maoris came to New Zealand; the Rakiura



Maoris of the south valued the flesh of the birds so highly that when they ceded Stewart Island to the Crown on June 29, 1864, they reserved to themselves and their descendants the right to take Mutton birds on the nearby islands. The Maoris and the *pakehas* (white people) privileged by marriage or custom to do so still travel to the islands every year for a season of "birding" that lasts about nine weeks, to make the annual catch of chicks.

Although the season does not open until April 1 the birders travel to their islands or *manus*—areas over which the holders have the sole birding rights—about two weeks beforehand to prepare everything for the opening. Shacks and work-sheds have to be cleaned and repaired, large quantities of wood have to be cut and stored, tracks cut through the bush, overhead wires on which the packs of birds are lowered from the surrounding heights to the work-sheds have to be set up, and many other jobs done.

Before this, however, the birders have been busy for weeks preparing the necessary gear. The large seaweed called "bull kelp" is gathered for making the traditional bags in which the Mutton birds are packed. The flattened fronds of the weed have a tough outer skin on each side, enclosing a structure like honeycomb within. The kelp is cut into lengths of about four feet, and each piece is made into a bag by breaking the honeycombing inside, except for about two inches along the sides and a little more at the bottom. It is then blown up by the aid of the hollow leaf-stalk of the *punui*, a plant resembling rhubarb, or a length of bamboo. The bag is kept inflated for two or three days until it is cured, and is then put in a cool moist place to soften. When the bags are ready for use they are bundled for transport to the islands. After the bags are filled with the prepared birds, and have been sealed, the air is excluded so that the contents remain in good condition. The exclusion of air is important, and the bags are therefore protected in baskets made from flax; cabbage-tree leaves or *totara* bark are used to cover the parts of the bags projecting from the baskets and prevent them being punctured.

Nowadays barrels and tins that hold from 100 to 200 birds are becoming increasingly popular with the birders, and are displacing the traditional bags because they save much preparatory work and are easier to handle. Even so, there is much work to be done in preparing for the season—timber for building and repairs, and stores for three months have to be got together, the stores no small item, for complete families of three generations go birding together; one of the

most important stores is salt, about fifty pounds for every thousand birds preserved.

The Government M.V. *Wairua* takes a party of over 150 birders to the islands near Stewart Island, and all the space in her holds and on deck is crammed with their gear. The active scenes on the waterfront during the days before she sails are the climax to weeks of preparation and eager anticipation, for birding is regarded as more than a trade, hard though the work may be.

Before the Government provided transport the birders had to make their way to the islands as best they could, usually in small fishing vessels whose skippers took payment for the passage in kind—in salted Mutton birds. The fare was 300 Mutton birds for difficult landings, 250 for the easier ones; these "passage birds", being the first of the season, commanded high prices. Unloading timber and stores from ship to dinghy, and from dinghy to slippery rock landings, often in rough water, is hard work; so too is shipping off the filled barrels at the end of the season. But all hands turn to, men, women, and children, and no-one is idle until everything is safely stowed.

The Mutton-birding season has two phases, the *nanao* and the *rama*. In the *nanao* period at the beginning of the season the fluffy fat chicks are pulled out of their burrows during the day, the birder probing the burrows with a stick to find those that are occupied. The chick can generally be reached by the fully extended arm, and a thick leather glove, stitched to the coat sleeve, gives protection from the sharp beak of the bird. The old birds, the *kaiekas*, are left in peace.

When the chicks are deserted by their parents and begin to venture out of the burrows at night the *nanao* period gives place to the *rama*, in which the birders catch them by torchlight. On dark and misty nights the chicks are easily dazzled by the light and can be caught in large numbers. Even if the birds are disturbed their slow clumsy movements prevent them escaping; but the light also attracts them, so that often a bewildered chick shuffles up to a torch while the birder is tying earlier victims into a bundle.

Electric or acetylene torches are used now, but not many years ago the birders made their torches from cylinders of *totara* bark rolled into a cone, bound with flax, and filled with the stomach oil from the birds. The dangers of night work on the steep rocky coasts of the islands have been much lessened since the introduction of overhead wires for sending the bundles of birds down to the work-sheds—it is no longer necessary to climb down bur-

dened with the catch.

Great care is taken to avoid bruising the flesh or breaking the skin in killing the birds. The old method of killing by biting the back of the head has been replaced by pressing the thumb into the back of the skull, or delivering a blow on it with a stick or the hand. The oil is drained from the stomach by pressure from the hand worked towards the head, and care is taken to prevent the oil from soaking into the feathers because plucking is difficult if that occurs. The birds are then tied in bundles of five at each end of a length of flax to form a *hui*, and the *huis* are either carried or wired down to the work-sheds, where they are dealt with by the more elderly women and the children.

The birds are easily plucked while they are warm, and a short dark down remains after the feathers are removed; this is quickly rubbed off after the birds have been immersed in nearly-boiling water for about ten seconds. The plucked birds are hung up for a day or

two for the flesh to become firm before they are cut up. The wings, feet, tail and neck are taken off before the birds are preserved, usually by salting the flesh after the entrails have been removed. The surplus salt is brushed off after a few days, and the birds are packed in bags, tins or barrels. A special method is used in preparing the *titi tahu* Mutton birds, held to be the most delicious eating; they are completely filleted and are preserved by being cooked in their own fat. When cooked they are tightly packed in their container and hot fat is poured over them to form a solid block and exclude all air. This "trying-out" method was adopted from the whalers and sealers who used it for preserving meat; birds so prepared keep in excellent condition for years.

By the third week in May all the Mutton birds but a few stragglers and the hapless kihakas have left on the northern migratory flight, and another season is over. But the end of the season does not mean the end of work for the birders. The birds have to be packed

The birds are plucked and salted and packed in barrels or air-tight bags; for generations these have been made from "bull kelp" seaweed, placed in a flax basket and protected with leaves or bark





Loading bags full of birds from the slippery rocks into a dinghy, to be transferred to a larger boat. Though Mutton-birding is always hard work the season is eagerly anticipated by the birders

into tins, barrels, or kits, feathers have to be bagged, and the oil headed up before being shipped off from the landing places. The feathers are used for bedding, and the fat is in demand not only for cooking but for its supposed virtues as a remedy for rheumatism. When all is safely stowed on board, and the Titi islands are left astern, the birders look forward to the beginning of the next season nine months later.

But the shores of Southland, the islands of Foveaux Strait, and the off-lying islands of Stewart Island are by no means the only breeding grounds of the New Zealand Mutton bird. Islands lying off the coast from the northern tip of North Island all the way down the east coast of both main islands are also used for nesting—the Three Kings, the Poor Knights, the Bay of Plenty, Kapiti and Mana islands not far from Wellington—as well as several parts of the west coast of South Island. And on some of the islands off the coast of North Island the Mutton birds have

some very strange neighbours, the lizard-like tuataras.

Although the tuatara looks like a large lizard with a row of short spines along its back, its internal anatomy shows that it is not closely related to any of the living reptiles. It is the only existing member of a very primitive group of reptiles that comes very near the main stem of the family tree from which most of the modern reptiles have sprung—it has changed very little during the enormous period of time in which all the modern reptiles, birds, and mammals have evolved. Every student of zoology is familiar with the tuatara, or at least with its skull, for it is of the greatest interest to those studying the evolution of the reptiles; but it is little known to the layman, even in New Zealand.

The tuatara was once common on the main islands of New Zealand, but “bush fires, wild pigs, dogs and cats, reptile-eating Maori tribes, and the advance of civilization, have swept them away except on some of the small



Zoological Society of London

The primitive, lizard-like tuataras, "living fossils" of the reptile class, live on uninhabited islands off the North Island of New Zealand where they sometimes share their burrows with nesting Mutton birds in mutual tolerance, but not amicably, for occasionally they eat their lodgers' offspring

uninhabited islands, difficult of access, where they dig burrows into which they retreat at the slightest sign of danger". The tuatara is nocturnal, and leaves its burrow to look for food as soon as the sun has set; its food consists entirely of animals, which are only taken when alive and moving about. The usual pace is a slow crawl with the belly and tail trailing on the ground, but when chasing prey the animal lifts the whole trunk from the ground and runs very fast.

The eggs of the tuatara are laid during the southern summer, from November to January, in a hole in the ground, and covered with sand and leaves. By the end of the following winter the embryos are nearly fully formed, but they are not hatched until over a year after the eggs are laid. In the meantime they seem to enter into a state of aestivation or suspended animation, the nasal chambers being closed by an overgrowth of their lining which is not absorbed until shortly before hatching.

The tuataras live in burrows as neighbours of the Mutton birds, but many of them are

more than that—they are lodgers, for bird and reptile often live in the same burrow. Perhaps it would be more correct to call the bird the lodger, because the burrow is the permanent home of the tuatara, whereas the bird inhabits it for a couple of months only. Oliver, the New Zealand ornithologist, found that the Mutton bird burrows on the Poor Knights Islands were three to four feet in length, with a nest of twigs, roots and leaves near the end. "In some of the burrows the tuatara is found, the relation between bird and lizard usually being not amicable but apparently one of mutual toleration. Occasionally the tuatara may eat a young petrel, but as this lizard feeds at infrequent and often long intervals, little damage is done. Falla states that a tuatara even when hard pressed was unwilling to approach a sitting shearwater."

The often repeated popular story of the tuatara and Mutton bird sharing their home in friendly cooperation is exploded by the objective researches of the unsentimental scientist.

The Small Farm in Rural Economy

by ARTHUR C. RICHMOND, C.B.E.

Even to many economists, the statement that over half the farms in England and Wales fall within the legal definition of a small-holding will come as a surprise. In terms of our national needs, this aspect of land-use presents an insufficiently considered problem which the Chairman of the Land Settlement Association analyses in a first article and for which his second offers solutions

CONTENTMENT cannot be measured in terms of money. It is mainly a state of mind. Production, on the other hand, can be so measured; and successful production is a condition of contentment. A farmer can be happy and indeed contented on a small income even though the quality of his farming is indifferent. Many have been in the past and perhaps too many still are: too many, because farming is no longer the sole concern of the farmer. It ceased to be so in 1914 when the people of these islands were shocked into discovering that milk did not come out of bottles or tins and that meat did not appear automatically in butchers' shops. Since then the farmer has become a kind of public servant. Before World War I he could, in practice, farm his land as he liked. It may have been his sole means of livelihood, but if he were content with a level of income and production below those which his land was capable of yielding, no-one was likely to complain.

Today that has changed. While the food-exporting countries are able, and willing, to send us steadily less and less, the land at our disposal in this country is already insufficient to grow much more than, say, sixty per cent of the food we need. Farming can no longer be regarded either as a pleasant form of life for those who do not draw their full livelihood from it or as a profession in which a man has a right to prefer easy-going ways and sufficient income for his needs to hard work and maximum production. For what he does with his land is of almost more concern to the community than what anybody else does in any other walk of life. We need as much food as we can extract from our soil within the limits set by our ability to expend capital in making it productive. And the farmer is a kind of joint trustee with the landowner for exercising the responsibility he owes to the community to put the land he farms to the best possible use and to maintain its fertility.

This change in the relationship of the farmer to the rest of society has other consequences. If the nation needs all the food that can be grown at an acceptable price from its own soil, the farms are the factories through which it is produced and should be planned for that purpose. But planning a farm is a complicated business; it cannot be done on a drawing-board, if only because nearly all the land of this country is already planned and laid out, inadequately it may be, but still planned and not easy to re-plan. At present many of those farm-factories are ill compacted. Some are awkward in shape and thus costly to run; others are composed of fields perhaps widely dispersed. Very many are ill equipped and large sums of money must be spent on buildings, water installations, drainage and electricity before we can achieve anything approaching the maximum production of food from our land.

PRODUCTION AND HUMAN VALUES

But towards what kind of plan for our farm-factories do we want to move? Should we consider only how to increase food production without regard to the effect that a production policy must have on the social life of the large and varied rural community that ultimately depends directly or indirectly on agriculture? At present the urgency of increasing the quantity of food we grow at home has arisen so suddenly and is so compelling that there is now danger of our forgetting that people live on the land as well as by its products; and that policy which concerns itself solely with the immediate and palpable necessities of life can, if we are not careful, gravely injure human values.

During the years when our minds became concentrated on developing the material sources of wealth and power through industry in our towns we did that very thing: we ignored the claims of human personality and condemned the bulk of our population to a



Photo, by courtesy of Wm. Roansom & Son Ltd.

Two types of farming landscape: (above) a "farm-factory", the centre of production for 500 acres in Huntingdonshire; and (opposite) part of a small-farming landscape in Monmouthshire where the average size of the holdings is a little over 7 acres. Which of these two is the most desirable—

form of imprisonment which prevented the unfolding of their powers and resulted in lopsided or stunted development. If now we look upon the countryside solely as a source of food production—as we are in a large measure already doing—we shall inevitably adopt policies which cannot but be inimical to the full personal and social interests of the men and women who live there.

The evolution of what is so unfortunately called the Welfare State is the expression of a half-conscious and fumbling sense that policies concerned with the means by which men live must also take into account the way they live. For the methods adopted to produce necessary wealth either promote or

inhibit the growth of that in ourselves which can, if we disregard it, ultimately turn wealth into dust and ashes. So it is nonsense to talk of an agricultural policy which has no social purpose; for the way in which agricultural production is organized must affect society. One kind of policy can result in the depopulation of villages and the exile of the small producer; another can have a totally different result. Thus in devising plans for growing more food we must, if we are not subtly to create, as we did in our towns, a fresh set of human troubles, make our planning for food go hand in hand with our planning for the lives of those who live by food production; and that means in effect almost the whole of

the varied population of our hamlets, villages and country towns.

LARGE OR SMALL PRODUCTION UNITS?

If agricultural and social policy constitute two aspects of a single question, then the problems which centre on the small farm as a unit of food production are not solely agricultural in character, but also social. In examining the structure of our agriculture in the light of the need to grow more meat and milk, eggs and bacon, vegetables and fruit, discussion already circulates round the question whether we have not got too many farms. Many students of agricultural economics think that we have, and that policy should be directed towards a reduction in the number of small ones and their consolidation into larger units which might produce more food of the kind we want at lower prices. Their answer to this question may be right, but I do not think anyone really knows; and probably no answer can be given which is applicable to every part of the country. Depending on soil and climate a different kind of food-factory is needed in different

areas and for different forms of production : meat, milk, cereals, market-gardening. In any case the existing structure cannot be changed rapidly and so whatever long-term plans may be agreed upon in regard to this particular problem, the immediate need is to ensure that all farms, whatever their size, are as effective instruments of food production as they are capable of being. The question of the remote future is secondary. What, then, is the present position?

In England and Wales there are some 363,000 farms of over five acres and of these about 193,000 or over fifty per cent are under 75 acres. In other words more than half the farms in this country fall within the legal definition of a small-holding as laid down by the Agriculture Act of 1947. There appears to be a good deal of evidence that output per acre is higher on small farms than on large ones, but that the costs of producing that output are greater. There is also some evidence that on the really small farms the standard of husbandry tends to be lower than on the larger units. There are thus two bad marks on the score of the smaller farms: high

—from the standpoint, on the one hand, of maximum efficiency in food production and, on the other, from that of its social influence on the life of our countryside? Or are both of them necessary in the interests of an agriculture adapted to varying conditions and of a healthy rural community?



prices for the consumer and in some cases a lower volume of food than the land is capable of producing. To meet more fully our pressing need for more food we must overcome these defects.

But it is not only the small farm that is in the dock, at least as regards production per acre. Experiment has shown that the average yield per acre could be increased substantially if it were brought up to the level of our best-managed holdings. This applies as much to large as to small units: indeed, on the ground that their output per acre is often higher, the latter may be serving the country better than the former. Here, however, we are concerned only to investigate the case of small-holdings and to seek the answers to two questions about them: how can they be made to turn out food more economically now; and, as a matter of long-term policy, should they be encouraged to survive or should their number be reduced? Because, as I have said, important social problems are involved, neither of these questions can be answered wholly in terms of technical improvements, although they should be examined first.

THE SMALL FARM'S HANDICAPS

The strength and weaknesses of small-holdings or family farms are fairly well known. In the first place the small farm is highly resistant to the kind of disaster which may bring bankruptcy to the larger farm. Labour costs are low and so the small man can carry on and maintain production in times of difficulty when his larger neighbour is compelled to economize and perhaps starve his land because he cannot afford to pay the labour he needs. On the small unit, too, the farmer can give a high degree of personal and detailed attention to his stock and indeed to every aspect of his undertaking which often is reflected in high production per acre. Holdings devoted to market-gardening combined with small stock—such as poultry and pigs—can yield a very high average level of production and provide a better net return from four or five acres than can many mixed or dairy farms of much larger acreage—if (and it is an important "if") they market their produce cooperatively. But the handicaps under which the small farm labours are severe. In the main, the man who becomes a small-holder for the first time is one who, though he may possess years of practical experience, has rarely been able to acquire any extensive knowledge of the scientific basis of agriculture. He tends to be ill equipped to manipulate his holding to the

best advantage. If he has previously been employed on general farms he tends also to operate his holding as though it were a farm of that kind, whereas a small unit presents a different set of problems if it is to yield both a maximum production and the kind of foods for which it is best adapted.

This is one reason for high cost of production. The equipment, the mechanical implements which it is economical for a moderate-sized or large farm to use may be needed on the small one, but represent a capital expenditure out of proportion to the revenue derived from using them. The small-holder must spend more money to get less income. He is at a great disadvantage in other directions. He has taken a small-holding because his financial resources are small. All too often this means that he is always short of working capital. He may have to stint himself in his ordinary living expenditure for years in order to amass the money he needs fully to equip his holding, to build up a reserve against bad times or to enable him to take advantage of the chance when it occurs to buy additional stock or implements on good terms. It means, too, that illness or an accident may so cripple him financially that he cannot carry on.

And his credit is none too good. Working as he must on a comparatively narrow margin of profit, exposed as he is to the risk of sudden misfortune, he cannot offer the reliable security which a banker must seek. Consequently he often has to look for credit to other sources. The merchant he deals with may allow him time to settle his accounts, but the merchant too must protect his own interests, and the small man will frequently find that he is paying for his supplies, in one way or another, more than his larger neighbours. It has been estimated that small men who are not members of cooperative requirement societies may pay as much as 10 per cent more than those who can buy in larger quantities than he can afford or needs to do. In selling, too, he may be at a disadvantage—particularly if he grows market-garden crops. Salesmen do not care for handling small quantities of vegetables and they look for growers who can guarantee a steady rate of supply. Small men cannot do so, and must spend too much of the time they should devote to cultivating their holdings, on trying to find a market for their produce.

The only cure for these handicaps is co-operation. At a recent conference it was stated that in a certain part of England there are to be found about 1000 growers of plums, apples, pears, soft fruits, flowers and veget-



John

The small farm provides the first rung in an agricultural ladder for the man whose natural gifts and ambitions can best enable him to serve his country by becoming a farmer. (Above) Where a lifetime of experience tells: a group of men whose ability to judge the points of a sheep derives from the management of large farms. (Right) The small-holder here portrayed has since achieved his ambition of entry into the ranks of medium-sized farmers



John Topham



Peter Fry



By courtesy of Rotary Hoes Ltd

(Above) An assemblage showing machinery—tractor, plough, harvester, lorry—which from time to time is needed to get the best out of a small farm, but which (with one exception) the small farmer can rarely afford to own himself. The exception is (left) the rotary hoe, an implement specially designed for the small-holder and market-gardener. In the Tamar Valley, where this photograph was taken, more than 500 such machines are in use

ables, whose holdings vary in size from quite small ones of one acre to comparatively large ones of sixty acres. All are served by the same railway line. At present there is no cooperation among them; but if they could cooperate effectively there is no doubt that they could lower transport charges by bulk loading, obtain better prices by packing to common standards and securing continuous supplies to the markets, and obtain lower prices for packing materials and other goods; so that every individual grower would benefit. In combining over buying and selling they would soon be in the way to discover methods for raising the quality of what they market—in fact to improve standards of husbandry—and to explore whether they could not organize cooperation in the use of heavy implements instead of either having to depend on a contractor to carry out certain mechanical operations or having each individually to buy implements which involve excessive capital outlay in relation to the return derived from their use. An article published

in *The Geographical Magazine* in February 1950 on the subject of small-holdings in Ulster showed how even a small measure of cooperation in the use of heavy implements can help to solve one of the principal difficulties which the small-holder constantly experiences.

Thus because small-holdings suffer from certain handicaps and because production from small farms is often more expensive than from large ones it does not necessarily follow that they are bad or even uneconomic production units. The important thing is to see how those handicaps can be overcome, for the rapid disappearance of the many thousands of them is most unlikely; and the Agriculture Act of 1947 imposes on County Councils the obligation to establish new small-holdings in response to demand.

THE SMALL FARM AS A WAY OF LIFE

What of the social aspect of the smallholding? The number of men, women, boys and girls whose livelihood depends on some

The independent and efficient small-holder has advantages not to be lightly forgone: among them that of securing better prices for his produce than his less competent neighbour, through a personal reputation for quality. This competitive raising of standards is assisted by such organizations as Hampshire Growers Limited, whose auctions (below) attract buyers from 100 miles away



Anthony Hooke

200,000 small farms must be in the region of 800,000, a not inconsiderable part of the rural population. A policy aimed at absorbing many of these small units into larger ones would evidently have a marked effect on the life of the countryside. It would also run counter to the intention of the Agriculture Act of 1947 by reducing the opportunity for men to become farmers operating on their own account. This raises an important social issue. Does the community benefit by the maintenance of the greatest possible number of openings for men to be independent producers, rather than salaried employees, or does it not?

The independent small farm is usually a family farm where wife and children must help in the work. Does this not too often entail undue restrictions and sacrifices for some members of the family?

The view might be taken that independence can be bought at too high a price and that even the apparent independence of the small-holder is largely an illusion. On the other hand it might be contended that it is highly undesirable, socially, that the chance should become more and more remote for men whose temperaments, tastes, and general make-up specially qualify them for the kind of life which a small-holding offers. To give even a superficial answer to these questions it is necessary to examine what are the characteristics of life on a small farm, and then to see whether they constitute a social problem to which, in the interests both of the people

ip Boucas





Philip E

Here is a man making a good living from ten acres who finds the price of independence well worth paying. His way of life fosters virtues: do its disadvantages outweigh them as a national asset?

concerned and of the rural community generally, solutions should and can be found.

With no reserve of labour, life on a farm of this kind can admit of little relaxation. It means a seven-day week all the year round and no eight-hour day. There are certainly compensations for this. To many men the sense of independence alone gives profound satisfaction: to others there is the constant stimulus of being able to move on to another and larger farm, an aim which is sometimes successfully achieved. But if men lose their

health, if they need a period of recuperation from illness, what then? The full precariousness of the small farm operated only or almost only by family labour becomes a stark reality; for the comparatively poor returns normally earned seldom permit of much in the way of savings, either to meet this form of trouble or to provide an income when old age reduces the capacity to work the farm. Here again co-operation helps, for by increasing the difference between receipts and outgoings it can foster the building up of reserves. Is even

this precarious independence genuine? Does a small man operating on his own account enjoy independence in any real and full sense of the term? He may be dependent on a contractor for his threshing and other work, and the contractor is tempted to consider the convenience of the more important customer—the larger farmer—rather than that of the small man. He may have to engage the goodwill of a neighbour for the marketing of some of his produce; he may be tied to his merchant both by unpaid bills and by the understanding that unless he continues to buy everything from him, his credit may be curtailed; and he and his wife will almost certainly have to devote the whole of their lives to making a living with very little time or energy left over for anything else. This can hardly be described as full independence: it is rather a tissue of dependencies which together may constitute a life hemmed in by anxiety.

Socially speaking, is it in the interests of the community that those who live by the yield of the small farm should have to concentrate their entire energies on the mere business of getting a living from it? It is not only the man and his wife who are concerned, but their children too. The wife may like the life and enjoy the hard work. On the other hand she may not; her health may fail; and the difficulty of earning enough may compel the children to work on the holding when it would be to their better advantage to continue their education and to study something other than the care of cows or the hoeing of potatoes. A small-holding can be very greedy of the lives of those who look to it for their living.

But against this can be set the fact that the small farm gives an opportunity to become a farmer which could be obtained in no other way; and there are many men in this country who want to become farmers whatever the drawbacks. Agricultural Institutes, Colleges and Universities are training large numbers of young men of whom many would, if they could, become farmers. The industry itself

needs a constant inflow of new and young recruits if it is to retain its vigour and adaptability to changing conditions and apply the results of modern knowledge. But finance presents a formidable difficulty. Few farms are available today to rent; while to buy a 100-acre farm may cost £6000 and another £2000 may well be needed to equip it. How many young men can find amounts of this kind or are willing to burden themselves with a debt which will keep down their profits for years and perhaps always hamper development? Thus, except for the well-to-do, entry into the ranks of the medium-sized farmers is financially almost prohibitive, and no period of service in the paid ranks will enable men to save enough ultimately to buy a farm. Consequently, the small-holding emerges as a principal door of entry into farming and as the main channel through which many recruits for the management of large farms must probably be looked for in the future. It has a significant function to exercise in opening the career of agriculture to those for whom farming is the only means of satisfying their natural gifts and ambitions: a by no means negligible factor in creating employment in rural areas and in retaining the vigour of the rural population.

Since the small farm plays so important a part in food production, in the social life of the countryside and in recruitment for the agricultural industry, we may assert that in the national interest policies should be pursued which strengthen its economic position, mitigate the weaknesses to which it is inherently exposed and improve the social conditions of those whose livelihood it provides. How is this to be done? Is it possible for the cooperative principle so to be applied that it can both raise the economic return to be derived from the small farm and also ease the physical strain imposed on the farmer and his family sufficiently to release energy for participation in other interests, satisfy other instincts and increase their real freedom? This will be considered in a separate article.